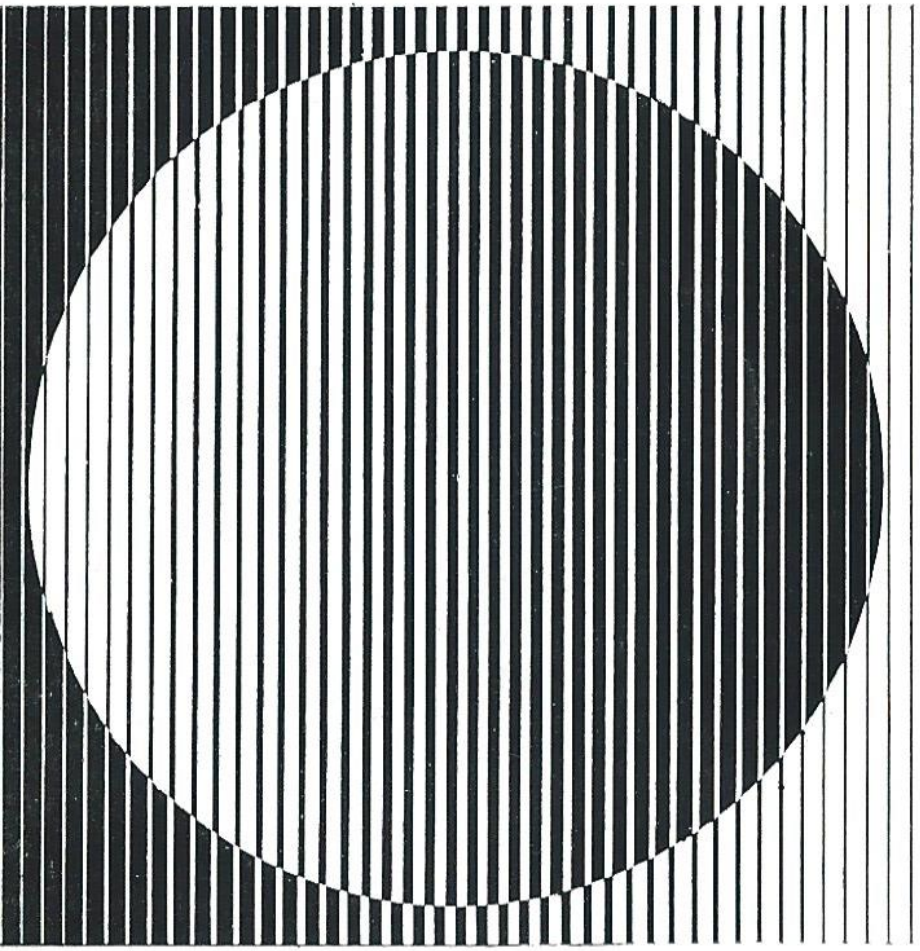
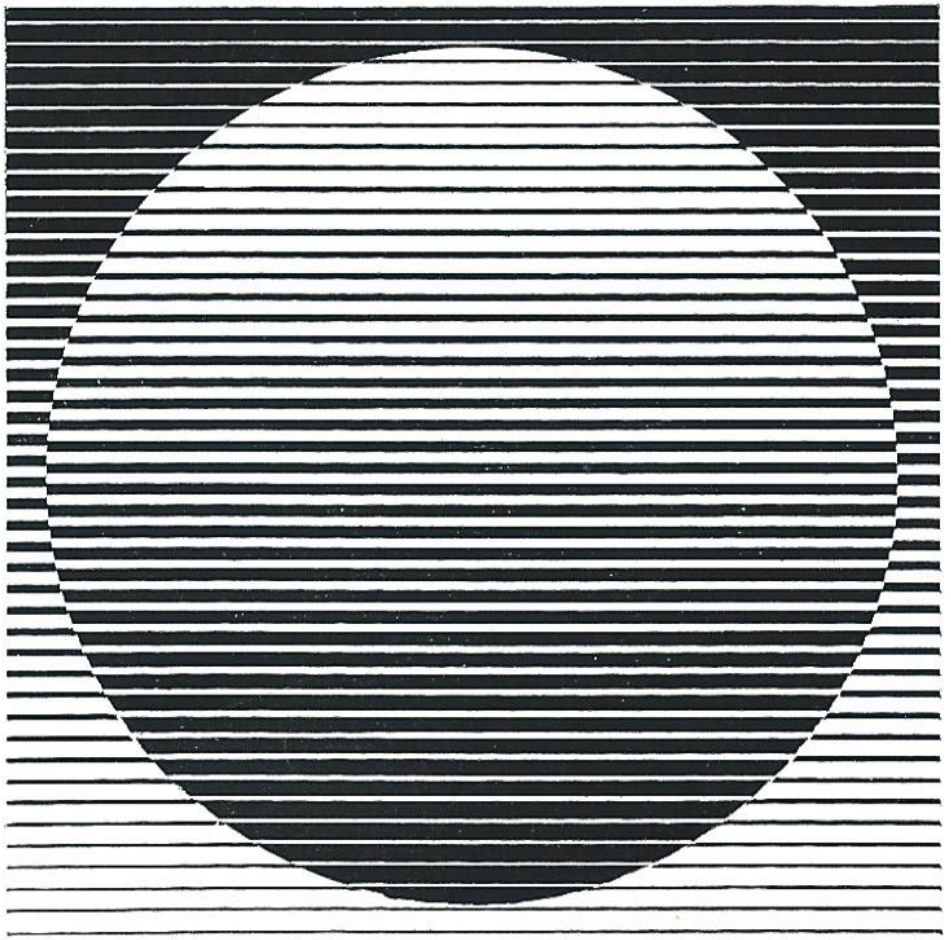
GOSSEN

Instructions



POLYSIX electronic



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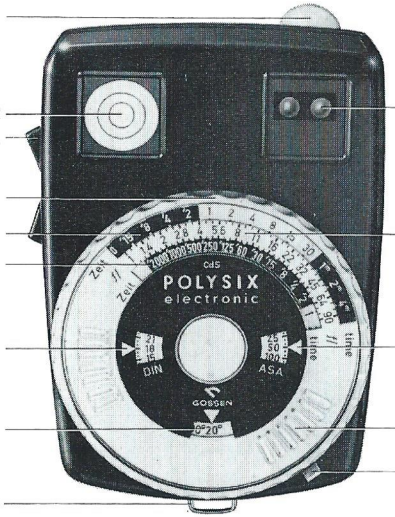

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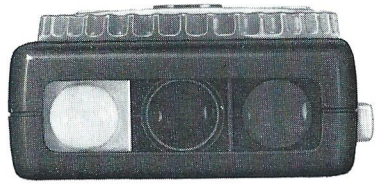
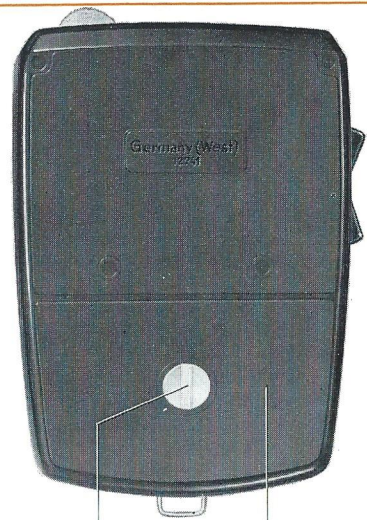


19 Viewfinder

18 Measuring lens

1 Diffusing sphere for incident light measurement



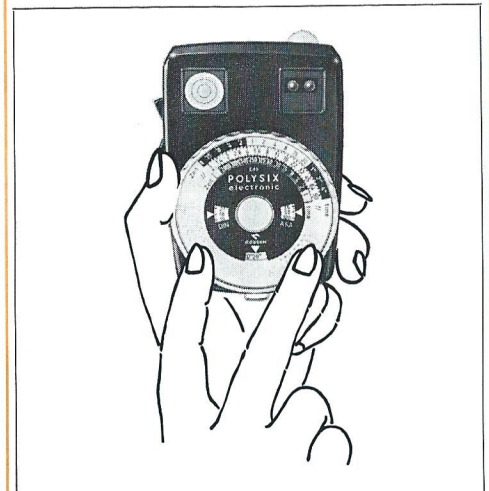
16 Locking screw for Battery chamber
Battery type: two pcs. IEC R 6 1.5 Volts

15 Battery cham

POLYSIX electronic

The POLYSIX-electronic is a product of the house of GOSSEN; manufacturers of the world-famous LUNASIX, SIXTAR, SIXTOMAT, SIXTINO and BISIX exposure meters; also of the SIXTICOLOR colour temperature meter, MAJOSIX enlarging meter and SIXTRON-electronic flash meter.

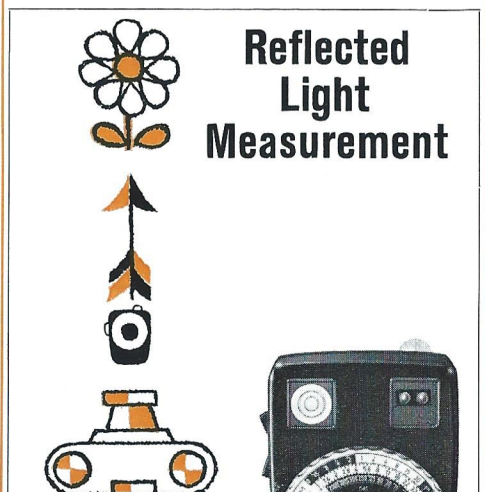
The POLYSIX-electronic will solve all your exposure measurement problems quickly and efficiently. An entirely new measuring system is used in this meter. A transparent grey wedge is coupled to the operating dial and moves in front of the window of the CdS cell. Transmission of light through the window is therefore varied as it falls on to the CdS photoresistor and thus the electronic current flowing through the resistor varies depending on the intensity of the light. The resistor is incorporated in a transistorized balancing circuit which includes two indicator lights. The dial is adjusted until both lights are equally bright, after which the exposure reading can be taken. Exposure measurements reach a new standard of precision with this modern electronic measuring instrument. The POLYSIX-electronic is also an extremely versatile meter. Three measuring angles of 30°, 20° and 10° can be selected at will and permit adjustment of the measuring field to suit the subject. For example, a very narrow measuring angle is often useful when used in conjunction with long focus lenses. It is also possible to use the narrow angle setting to isolate a small, important object or to measure different parts of the subject and produce a subject brightness ratio. For incident light readings, the POLYSIX-electronic is provided with a diffusing sphere.



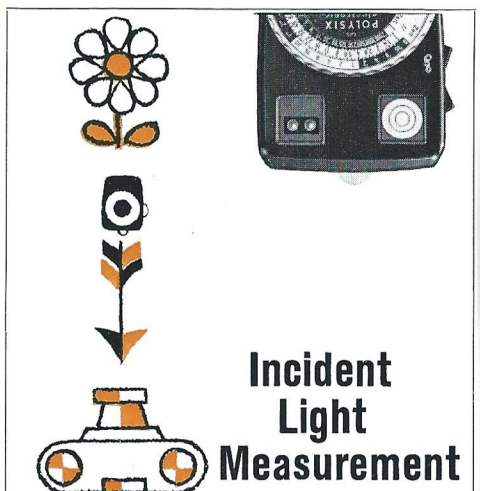
Adjustment for Film Sensitivity

Refer to the film instruction sheet to de
mine its correct DIN or ASA speed.
appropriate speed is set against either
DIN reference mark (7) or the ASA refere
mark (12). The scale may be turned by me
of the moulded ridges (13). A DIN/ASA
version table will be found on page 20.

Push the diffusing sphere completely to the right as far as it will go. Select the required measuring angle, then aim the meter at the subject (as shown by the arrow in the picture).



Move the acceptance-angle adjustment lever to 30° and centralize the diffusing sphere. The meter is then directed from the subject position towards the camera a shown by the arrow in the illustration.



The green end of the rocker switch (3) is pressed and the adjustment ring (4) is turned until both reference lights (10) appear of equal brightness. At this point, the shutter speeds and aperture numbers lying adjacent to each other on their respective scales offer a choice of exposure combinations from which can be selected one suited to the subject. If it is impossible to bring the two reference lights to equal brightness, it is indication that the light intensity is too for the high intensity measuring scale the procedure should be repeated but wi red side of the rocker switch depressed this case, however, there will be a red posure time scale opposite the aper scale from which to choose the requ exposure combination.

Balancing the Reference Lights

When the operating switch is depressed, one or other of the reference lights will be weaker than the other or may not light at all. The disposition of the lights provides an indication of the direction in which the ring must be turned to equalize their intensity. If the left-hand light is the brighter, then the measuring ring should be turned clockwise; if the right-hand light is brighter then the ring should be turned anti-clockwise, i. e. the top of the dial is turned towards the dimmer of the two lights.

Viewfinder and Reading Angle Adjustment

The viewfinder of the POLYSIX-electr shows the subject and superimposes up the measuring fields for 30°, 20° and The outer circle is, of course, the 30° f the middle the 20° and the inner the In the window (8) can be seen the measu angle which has been selected by mo the lever (4).

The smaller measuring angles allow pre measurement of small areas. In fact, vidual parts of the subject can be meas separately to establish the lighting cont i. e. measurement of the lightest and dar parts of the subject. The contrast ra which the film can reproduce correctl dependent on its type and in the cas negative films (black & white or colour the characteristics of the printing pape print film to be used. In general work normal materials, contrast ratios in the ra 1:16 to 1:60 can be expected.

About the Batteries

The POLYSIX-electronic is powered by two 1.5 volt cells such as IEC-R6, Varta 280 or 244, or equivalent. The useful life of a set of batteries under average use is about one year but if the reference lights begin to loose brightness after a time, it is an indication that the batteries are becoming exhausted and should be renewed. To change the batteries, open the battery compartment (16) with a coin. Loss of voltage by the batteries does not cause inaccuracy of measurement.

Interpreting Exposure Readings

It should be mentioned at this stage that the POLYSIX-electronic cannot think for you. In the same way that a computer is helpless without the skilled interpretation of a programmer, so the POLYSIX-electronic will provide more precise exposure information the more skilfully you use it. The more experience you gain with the POLYSIX-electronic the easier it will become.

It should be appreciated that the POLYSIX-electronic sees each subject as a varying mixture of light, medium and dark areas which (when taking reflected light readings) it integrates into an "average" on which the exposure reading is based. This "average" is correct in a surprisingly large proportion of cases but occasionally a subject may have a much higher or lower proportion of dark

areas than "average" which could resu
a false reading. In such cases, find an
in the scene which is of average bright
and measure that. The variable accepta
angle of the POLYSIX-electronic is a g
help in this sort of situation as it per
more convenient "isolation" of the sele
area without influence by its surround

Lighting for Effect

Many pictures are improved by deliberately increasing or decreasing the lighting contrast dramatically but contrast manipulation should not be overdone – if increased too much the film may not be able to cope. If in doubt, check the lighting contrast by measuring it; the POLYSIX-electronic is ideal when set at its narrowest angle of acceptance. First, the shadow side, then the highlight side of the subject may be measured and compared; alternatively, incident light readings, first towards the effect light and then towards the fill-in light, can be made and compared. With black & white film, the difference should not normally be greater than the 1:3 while with colour film the reading of the lightest side of the subject should not be more than double that of the darkest. If it is wished to produce shadowless soft lighting, for "high key" pictures or copying work, the lights should be arranged so that the POLYSIX-electronic gives the same reading from all parts of the subject, and background (if any).

After taking an exposure measurement, the iris and shutter speed scales lie adjacent to each other, for example, as shown below:

f/stop	22	16	11	8	5,6	4	2,8	2
shutter speeds	1/8	1/15	1/30	1/60	1/125	1/250	1/500	1/1000

Each pair of aperture and exposure time indicates correct overall exposure, but only one combination is likely to suit any particular photographic subject.
For instance, with a rapidly moving object, a high shutter speed should be chosen but the correspondingly wide aperture will mean

Sharpness in Motion and Depth

less depth of field. Alternatively, for a sub
having great depth a small aperture sh
be chosen but a slow shutter speed
result and the operator must guard aga
camera shake. The choice is very muc
matter of personal experience, but in
case you may find that there are hint
your camera instruction book, while m
photographic text books give sugge
shutter speeds for various types of sub
and tables. In general, it can be assu
that sport scenes call for the fastest shu
times, while static landscapes can be ta
with the longer exposure times, say 1/
1/30 th or even more if the camera is fi
supported on a tripod.

Very often the picture will require both near and far objects to be equally sharp. Just how much is indicated by the depth of field scale of the camera lens or in a chart which may be included in the camera instruction book. The smaller the aperture opening, the greater the depth of sharpness will be but this necessitates lengthening the exposure time. The conflicting demands of high shutter speed to freeze movement and small aperture to gain depth of field tend to diminish the choice of exposure combination so that usually there is little doubt as to which is to be selected.

Occasionally the demands of the picture are such that a compromise must be chosen. A slower than ideal shutter speed which risks a little subject movement is often better than not trying to get the picture at all.

Exposures at Night

If you are photographing at night and wish to retain the character of night in the picture it is actually necessary to use shorter exposure times than indicated by the POLYSIX-electronic, for the meter will try to "correct" the exposure and make the picture look as though it had been taken in daytime.

There are no set rules and only experiment and personal experience can really help you. The reaction of films to long exposure times is subject to certain changes and you should refer to the discussion on Schwarzschild-effect (reciprocity failure) on page 22.

Colour at Night

At night, in the streets, shop windows illuminated advertisements make excel photographs. For scenes which are pre minantly lit with neon or fluorescent light it is best to use daylight type film. For sce which are predominantly lit by incandes lamps it is best to use type A (artificial li film. When in doubt, daylight type film is best choice as it gives the most pleasant acceptable reproduction of colours unde conditions.

In the Snow

Reflected Light Measurement

When using the reflected light method on snow-covered landscapes, the entire reading area is filled by brilliant white light. An overall reading would generally be too high to give detail in people or objects forming a small proportion of the scene. The variable measuring angle of the POLYSIX-electronic will often permit selective readings to be taken from the important part of the snow-scape, but generally speaking, it is better to use incident light measurement for this type of subject. By incident light measurement, a "straight" reading is usually the correct one for snow but if you wish to achieve special effects, e.g. to emphasize fine gradations of shadow detail in the snow, then try half or one stop less. In this circumstance, of course, the foreground may be a little lacking in detail or may reproduce with rather saturated colours on colour film.

'2 '4 '8 etc. are fractions of seconds: 1/2 - 1/4 - 1/8 sec. etc. Unmarked numerals 1 2 4 etc. are full seconds.
1m 2m 4m etc. are minutes. 1h 2h are hours.

Cine Exposure

The POLYSIX-electronic is as proficien reading exposures for cine as for still. M surements are taken in the usual way, ei reflected or incident light methods, and correct aperture setting is the one that adjacent to the "equivalent shutter spe The "equivalent shutter speed" at vari running speeds (frames per second) often be quoted in the camera instruc manual, but if not they can be calculated the following method.

Double the filming speed in f.p.s., then c vert it to a reciprocal. Then select the shu speed on the POLYSIX-electronic s which is closest to the resulting fractio the "equivalent shutter speed"., e.g. 16 f doubled = 32. Reciprocal = 1/32. Nea shutter speed on scale = 1/30th.
Some modern cameras actually have so what shorter equivalent shutter speeds t produced by the foregoing formula, but

DIN	ASA	DIN	ASA
6	**3**	25	250
7	4	26	320
8	5	**27**	**400**
9	**6**	28	500
10	8	29	650
11	10	**30**	**800**
12	**12**	31	1000
13	16	32	1250
14	20	**33**	**1600**
15	**25**	34	2000
16	32	35	2500
17	40	**36**	**3200**
18	**50**	37	4000
19	64	38	5000
20	80	**39**	**6400**
21	**100**	40	8000
22	125	41	10000
23	160	**42**	**12500**
24	**200**		

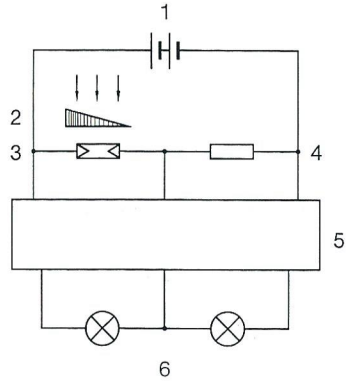
differences are seldom large enough to have any practical significance.
Note that in some cine cameras with reflex viewfinders, a proportion of the light entering the lens is diverted into the finder and therefore the light reaching the film is less, aperture for aperture, than with a nonreflex model. Check the camera instruction manual for the actual correction which must be allowed.

On the scales 7 and 12 of the POLYSIX-electronic, only the more importantASA and DIN speeds are actually numbered. However, intermediate speeds are marked and the equivalent speeds are shown in the chart shown here.

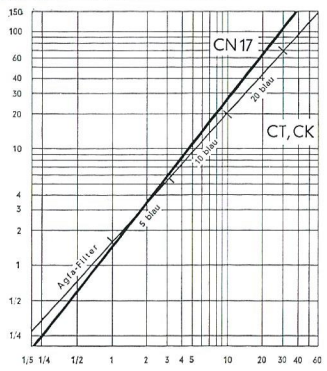
Technical Supplement

Diagram of the POLYSIX-electronic

1 Battery
2 Transparent grey wedge
3 Cds photoconductive cell
4 Standard resistance
5 Transistorized sum and difference amplifier
6 Reference lamps



Agfa-Color



Perutz Color C-18

Measured exposure time	f/stop correction in steps
from 1/4 sec. and longer	+ 1/2
from 1 sec. and longer	+ 1
from 4 sec. and longer	+ 1 1/2
from 1 min. and longer	+ 2
from 4 min. and longer	+ 3

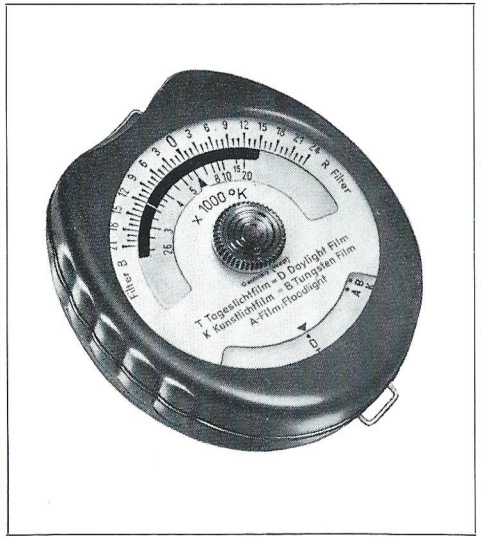
With exposure times of more than 15 sec. colour shifts may occur which can be balanced by purple filters 05 or 10 (Agfa Filters). When using colour correcting filters note the filter factor additionally.

Hints

Your POLYSIX-electronic is a precision
strument, strongly built and accurately ca
rated. You should not attempt to recalib
by direct comparison with other light met
for this is too imprecise unless a spe
optical bench is used. Should your POLYS
electronic ever develop a fault please do
attempt to repair it yourself but send it ei
to the manufacturer or to his agent in y
country.

Sixticolor

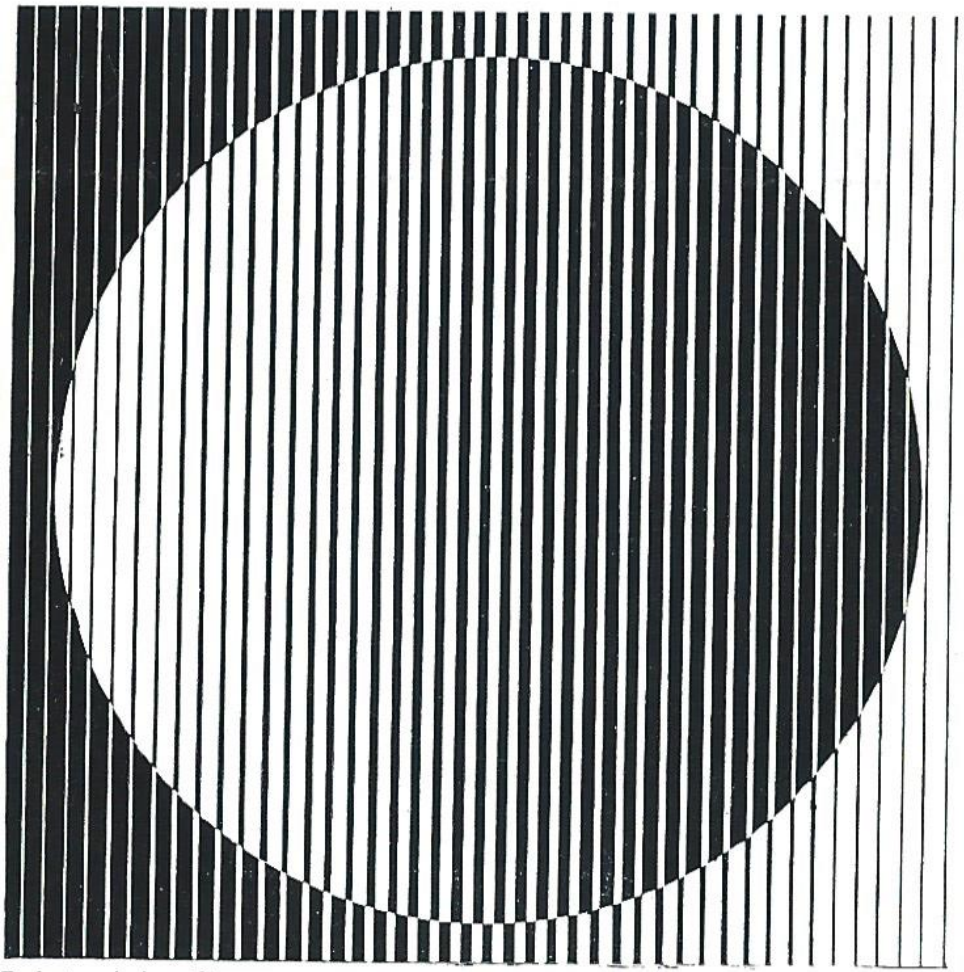
Automatically reads the colour temperature in degrees Kelvin and indicates correction filters for lighting of colour temperatures from 2 600° to 20 000° K. It can be calibrated for use with all types of colour film.



Trilux

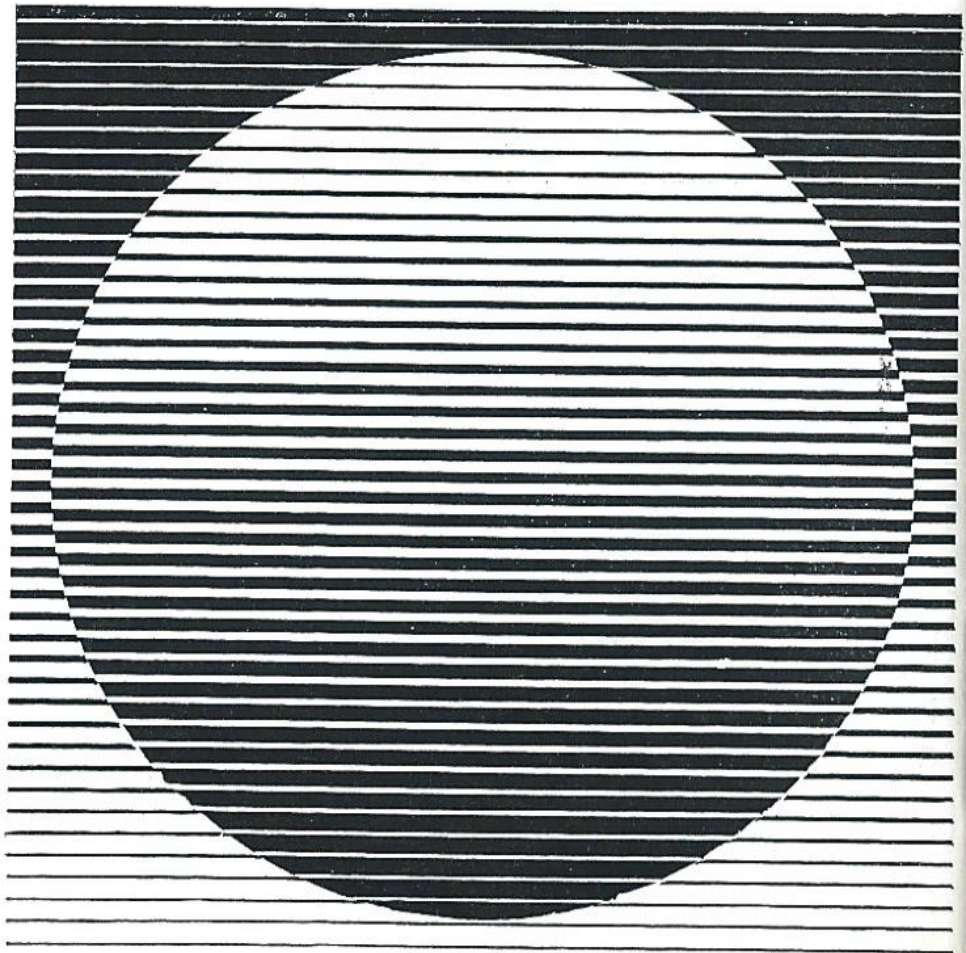
With the Trilux you can measure lighting intensity with the greatest ease and accuracy. Triple measuring ranges plus variable acceptance area of the cell gives the Trilux adaptability which makes it universal in application. It is especially useful for use in studio lighting measurement.

GOSSEN



Printed in Germany

POLYSIX
electronic



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